

REMARKS

The amendment of claims 1 and 4 are fully supported by Figure 1 of the specification which shows that the current blocking layer 115 is a solid layer with no hollow portions unlike, for example, the hollow portions 130 in the current blocking layer 112 of Figure 1 of Hirukawa. Claims 1 and 4 have been amended to recite that the current blocking layer *consists of* a solid layer to exclude the possibility of any hollow portions being within the current blocking layer.

Claims 1, 7, 9, 11, 13, 15, 17 and 19 were rejected as being anticipated by Hirukawa. This rejection is respectfully traversed.

An essential feature of Hirukawa is “*the hollow portion* [130] provided inside the first current blocking layer [112] in the vicinity of and approximately parallel to the ridge stripe-shaped third cladding layer [109]” (claim 1; also see Fig. 1 of Hirukawa). Hirukawa does *not* disclose that “the current blocking layer consists of a solid layer.” Thus, the anticipation rejection should be withdrawn.

Claims 4, 8, 10, 12, 14, 16 and 18 were rejected as being obvious over Hirukawa in view of Fukunaga and further in view of Nishiguchi. This rejection is respectfully traversed.

Foremost, Fukunaga and Nishiguchi do not disclose that “the current blocking layer consists of a solid layer.” Thus, the cited prior art do not teach or suggest this invention *as a whole*.

Hirukawa explains that the prior art has no hollow portion. Please see Fig. 8 and paragraphs [0004] and [0005] of Hirukawa. The prior art cited in Hirukawa, however, had a problem, namely, that the end face would be destroyed due to the Al oxide generated thereon by the active Al from AlGaAs based semiconductor during operation at a high output (see paragraph [0008] of Hirukawa). Thus, Hirukawa provides a semiconductor laser device capable of implementing a single transverse mode oscillation with high reliability and long life with a hollow portion embedded in the current blocking layer (see paragraphs [0010] and [0014] of Hirukawa). As explained above, the hollow portions (130) in the current blocking layer of Hirukawa are

essential in the semiconductor laser device of Hirukawa. One of the features of Hirukawa is to use InGaAsP based material in the quantum well active layer (105) for decreasing the difference in refractive index between the hollow portion (130) and the quantum well layer (105) compared to the case of using an active layer made of conventional AlGaAs based material for stabilizing a single traverse mode oscillation, as is described at paragraph [0015].

The semiconductor laser of Hirukawa having the hollow portion is *totally different* from the claimed invention wherein the current blocking layer *consists of* a solid layer to exclude the possibility of any hollow portions being within the current blocking layer. A person of ordinary skill in the art would not have thought of eliminating the hollow portion of Hirukawa as the removal of the hollow portions would have destroyed the invention of Hirukawa and returned Hirukawa back to the prior art shown in Fig. 8. Furthermore, there is no suggestion or motivation in the prior art to eliminate the hollow portions of Hirukawa.

Applicant (who is also the applicant on Hirukawa) invented the present invention with a different intention from that of Hirukawa. Applicant's intention was to solve the problems of the semiconductor laser devices disclosed in the prior art references cited in Hirukawa, *without* the need for making hollow portions in the current blocking layer as in Hirukawa.

In short, Applicant has avoided the necessity of having the hollow portions in the current blocking layer (as disclosed in Hirukawa), while at the same time has produced *unexpected results* by avoiding the problems of the semiconductor laser devices of the prior art cited in Hirukawa that had a solid current blocking layer without the hollow portions of Hirukawa. In light of the above arguments, the obviousness rejections over the cited prior art should be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 204552032000.

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Respectfully submitted,

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